Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-9 (Canceled)

Claim 10. (Currently amended) A method for identifying and quantifying impurities in a cryogenic fluid, comprising the steps of:

measuring ~~the absorption~~ a first energy spectrum of ~~the~~ a first cryogenic liquid by passing light in the near infrared region through ~~the~~ said first cryogenic liquid, said first energy spectrum comprising a first plurality of wavelengths, said ~~cryogenic liquid absorption spectrum~~ first plurality of wavelengths corresponding to a first reference ~~energy~~;

measuring ~~the absorption~~ a second energy spectrum of at least ~~one~~ a first impurity ~~alone~~ by passing light in the near infrared region through said first impurity, said second energy spectrum comprising a second plurality of wavelengths, said second plurality of wavelengths corresponding to a neat impurity reference;

providing a cryogenic liquid sample comprising a second cryogenic liquid and a target impurity;

passing ~~a~~ said cryogenic liquid sample into a flow cell, wherein the maximum pressure drop of said cryogenic liquid sample across said flow cell is in the range of 0.75 to 1.5lb/in.^{2};

measuring the ~~absorption~~ energy spectra of said cryogenic liquid sample by passing light in the near infrared region through said cryogenic liquid sample while said cryogenic liquid sample is within said cell, said sample energy spectra including said first energy spectrum and a target impurity energy spectrum, said target impurity energy spectrum having a third plurality of wavelengths corresponding to a target energy reference;

determining the identity of said target impurity in said cryogenic liquid sample by comparing said cryogenic liquid sample ~~absorption~~ energy spectra to said ~~cryogenic liquid and impurity~~ first reference and said neat impurity reference; and

~~confirming the presence of said cryogenic liquid sample absorption spectrum associated with said impurity, said sample absorption spectrum associated with said impurity corresponding to a second reference energy; and~~

determining the concentration (C) of said target impurity in said cryogenic liquid sample by the following relationship,

$$kC = \log \frac{\cancel{\text{second}}\ \text{target energy reference}\ \cancel{\text{absorption energy}}}{\text{first reference}\ \cancel{\text{absorption energy}}}$$

where k is a fixed proportionality constant.

Claim 11. (Original) The method of Claim 10, wherein said flow cell provides substantially continuous flow of said cryogenic liquid sample through said flow cell.

Claim 12. (Original) The method of Claim 10, wherein said maximum pressure drop across said flow cell is approximately 1.0 $lb./in.^2$.

Claim 13. (Currently amended) The method of Claim 10, wherein said light to be passed through said first cryogenic liquid, first impurity and cryogenic liquid sample is scanned in the range of 900 to 2200 nanometers.

Claim 14. (Currently amended) The method of Claim 10, wherein said second cryogenic liquid comprises a liquid fluorinated hydrocarbon selected from the group consisting of hydrofluorocarbon, chlorofluorcarbon, hydrofluoroalkane and derivatives thereof.

Claim 15. (Currently amended) The method of Claim 10, wherein said target impurity comprises a material having at least a CO, NH, OH, CH and SH bond.

Claim 16. (Currently amended) The method of Claim 10, wherein said impurity comprises a material having molecules that exhibit a vibration energy in the range of approximately 1000 nm to 250 nm.

Claim 17. (Currently amended) The method of Claim 10, wherein said target impurity comprises a volatile organic.

Claim 18. (Currently amended) A method for identifying and quantifying impurities in a cryogenic liquid at multiple locations within a production environment, comprising the steps of:

measuring ~~the absorption~~ a first energy spectrum of ~~the~~ a first cryogenic liquid by passing light in the near infrared region through ~~the~~ said first cryogenic liquid, said first energy spectrum comprising a first plurality of wavelengths, said ~~cryogenic liquid absorption spectrum~~ first plurality of wavelengths corresponding to a first reference ~~energy~~;

measuring ~~the absorption~~ a second energy spectrum of at least ~~one~~ a first impurity ~~alone~~ by passing light in the near infrared region through said first impurity, said second energy spectrum comprising a second plurality of wavelengths, said second plurality of wavelengths corresponding to a neat impurity reference;

providing a plurality of flow cells and a plurality of cryogenic liquid samples, each of said plurality of cryogenic liquid samples including a second cryogenic liquid and at least a second impurity;

passing a respective one of said plurality of cryogenic liquid ~~sample~~ samples into each of ~~a~~ said plurality of flow cells, wherein maximum pressure drop of said samples across said flow cells is in the range of 0.5 to 5.0 lb./in.^{2}, each of said flow cells corresponding to a location within the production environment;

selectively measuring the ~~absorption~~ energy spectra of said cryogenic liquid samples by passing light in the near infrared region through said cryogenic liquid samples while said samples are contained within said flow cells, each of said energy spectra including said first energy spectrum and a second impurity spectrum, said second impurity spectrum having a third plurality of wavelengths corresponding to a second impurity energy;

determining the identity of said second impurity by comparing said cryogenic liquid sample ~~absorption~~ energy spectra to said ~~cryogenic liquid and impurity spectra~~ first reference and said neat impurity reference; and

~~confirming the presence of said sample absorption spectrum associated with said impurity, said sample absorption spectrum associated with said impurity corresponding to a second reference energy; and~~

determining the concentration (C) of said second impurity in said cryogenic liquid sample at each of said cell locations by the following relationship,

$$kC = \log \frac{\text{second impurity energy reference } \cancel{\text{absorption energy}}}{\text{first reference } \cancel{\text{absorption energy}}}$$

where k is a fixed proportionality constant.

Claim 19. (Currently amended) The method of Claim 18, wherein maximum pressure drop across each of said plurality of flow cells is in the range of 0.75 to 1.5 lb./in.^{2}.

Claim 20. (Currently amended) The method of Claim 18, wherein said maximum pressure drop across each of said plurality of flow cells is approximately 1.0 lb./in.^{2}.

Claim 21. (Currently amended) The method of Claim 18, wherein said light to be passed through said first cryogenic liquid, first impurity and said plurality of cryogenic liquid samples is scanned in the range of 900 to 2200 nanometers. .

Claim 22. (Currently amended) The method of Claim 18, wherein said second cryogenic liquid comprises a liquid fluorinated hydrocarbon selected from the group consisting of hydrofluorocarbon, chlorofluorocarbon, hydrofluoroalkane and derivatives thereof.

Claim 23. (Currently amended) The method of Claim 18, wherein said second impurity comprises a material having at least a CO, NH, OH, CH and SH bond.

Claim 24. (Currently amended) The method of Claim 18, wherein said second impurity comprises a material having molecules that exhibit a vibration energy in the range of approximately 1000 nm to 250 nm.

Claim 25. (Currently amended) The method of Claim 18, wherein said second impurity comprises a volatile organic.

Claims 26-30. (Canceled)